



In the United States Patent and Trademark Office

In re Application of:

Neill E. Daley, et al

Group Art Unit: 1507

Examiner: L. Weiner

RADIATION-SENSITIVE COMPOSITION
CONTAINING A RESOLE RESIN, A
NOVOLAC RESIN, AN INFRARED ABSORB-
ER AND A TRIAZINE AND USE THEREOF
IN LITHOGRAPHIC PRINTING PLATES

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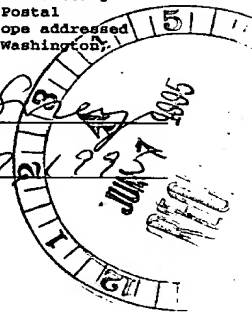
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Serial No. 212,434

Filed 14 March 1994



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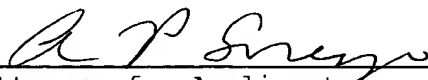
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Neil F. Haley, et al

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COMPOSITION CONTAINING A
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Sir:

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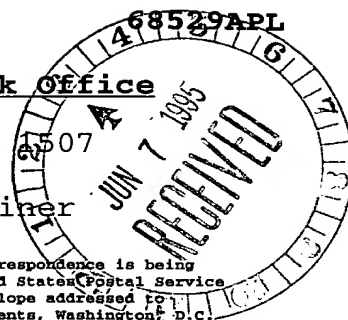
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AP Lorenzo
MAY 17, 1995



8/W.m
6/9/95

REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. 1.111

In response to the Office Action of March 6, 1995, reconsideration of this application is respectfully requested for the reasons which follow.

The Examiner is respectfully asked to reconsider her interpretation of the Garth reference. Applicants' claimed composition is described by the Examiner as comprising a resole resin, a novolac resin, an infrared absorber and a photosensitive ingredient but in fact Applicants' claims do not encompass all photosensitive ingredients but only haloalkyl-substituted S-triazines. With regard to such specific claims, Garth is not a pertinent reference since it in no way describes, suggests or contemplates the use of a haloalkyl-substituted S-triazine.

As pointed out in the Amendment of December 19, 1994, Garth provides no disclosure of the use of two of the four essential ingredients of Applicants' novel composition, namely the haloalkyl-substituted S-triazine and the infrared absorber. The Examiner is

mistaken in referring to the Crystal Violet SC utilized in Examples 2 and 3 of Garth as an infrared absorber. Garth has no reason to use an infrared absorber. The Crystal Violet SC that he employs is not an infrared absorber.

Garth describes exposure of his light-sensitive coating to a suitable actinic light source and says on page 2 at lines 28 to 30 that "Suitable sources include metal halide, mercury vapor and xenon types and UV tubes." These are all sources of ultraviolet radiation and not sources of infrared radiation. Crystal Violet SC is a colorant that is commonly used to enhance the sensitivity of orthoquinone diazide compositions to ultraviolet radiation and Garth apparently uses it in very small amounts in his working examples 2 and 3 for this purpose. There is clearly no suggestion in Garth of Applicants' use of an infrared absorber nor of Applicants' process of exposing to activating infrared radiation.

The attention of the Examiner is courteously directed to the enclosed copy of U.S. Patent 4,034,183 entitled "Process For The Production Of Planographic Printing Forms By Means Of Laser Beams", issued July 5, 1977. In this patent, Crystal Violet is used to provide sensitivity to radiation in the range of from 300 to 600 nanometers, such as the radiation from an argon laser (see line 55, column 2, line 63, column 2, lines 10-15, column 4, Example 3 and Example 7.) It would appear that Garth's use of Crystal Violet is for similar purposes. It is not relevant to the use of an infrared absorber. As explained at lines 20-28 on page 14 of Applicants' specification, a particularly suitable exposing device for use in Applicants' process is a laser diode with a maximum output at about 800 nanometers.

The attention of the Examiner is also courteously directed to the enclosed copies of pages 239 and 240 from "The Sigma-Aldrich Handbook of Stains,

Dyes and Indicators" (Aldrich Chemical Company, Inc. is a commercial source for Crystal Violet). As indicated by this technical literature, the absorption peak for Crystal Violet is at about 600 nanometers and it has significant absorption below 350 nanometers but almost no absorption above 650 nanometers. It is generally accepted that the ultraviolet occurs below 390 nanometers and the infrared occurs above 770 nanometers. Thus, Crystal Violet is not used as an infrared absorber since this is a region in which it does not absorb. While Garth does not state the reason for which he uses Crystal Violet, it appears that it is employed as an ultraviolet absorber.

The compositions described by Garth are intended for ultraviolet exposure and not for infrared exposure. Moreover, for use in a negative-working process the compositions of Garth require both an imagewise exposure and an overall exposure. In marked contrast, Applicants' novel composition can be used in a negative-working process with only an imagewise exposure. No overall exposure is needed with Applicants' composition and this is an important advantage of Applicants' invention.

With regard to the rejection of claims 1-27 for obviousness-type double patenting over claims 1-21 of U.S. Patent No. 5,372,907, a terminal disclaimer is filed herewith with respect to this patent. In view of the filing of the terminal disclaimer, this rejection should be withdrawn.

The rejection of claims 1-27 under 35 U.S.C. 103 as unpatentable over Garth in view of Stahlhofen and Newman is again respectfully traversed.

The invention disclosed and claimed by Applicants requires the presence of four essential components, namely (1) a resole resin, (2) a novolac resin, (3) a haloalkyl-substituted S-triazine and (4) an infrared absorber. Garth provides no disclosure of the use of two of the four essential ingredients,

namely, the haloalkyl-substituted S-triazine and the infrared absorber.

Stahlhofen describes a composition containing:

(a) a 1,2-quinonediazide or a mixture of a compound that forms an acid on exposure and a compound having at least one C-O-C bond cleavable by acid,

(b) a water-insoluble binder,

(c) a photolytically cleavable organic halogen compound which can be a haloalkyl-substituted S-triazine and

(d) an azo dyestuff containing at least one nitro group.

Stahlhofen provides no disclosure of Applicants' use of a mixture of a resole resin and a novolac resin nor of Applicants' use of an infrared absorber. Thus, only one of Applicants' four ingredients, namely the haloalkyl-substituted S-triazine, is required in Stahlhofen's composition.

The Examiner points out that Stahlhofen teaches the equivalence as acid donors of haloalkyl-substituted S-triazines and naphthoquinone-diazidesulfonyl halides. Based on this teaching of equivalence, the Examiner concludes that it would be obvious to use the haloalkyl-substituted S-triazine of Stahlhofen in the formulation of Garth in place of the orthoquinone diazide utilized by Garth. However, the Examiner has overlooked the fact that Stahlhofen employs sulfonyl halides of naphthoquinonediazides whereas Garth does not employ his naphthoquinonediazide in the form of a sulfonyl halide. Stahlhofen requires that the compound be an organic halogen compound so that it will form a halogen acid. Garth does not require the formation of a halogen acid but, on the contrary, uses his naphthoquinonediazide to provide sensitivity to light. Thus, Stahlhofen provides no conceivable basis on which one would be lead to replace the naphthoquinonediazide of Garth with a haloalkyl-substituted S-triazine. Note that Stahlhofen teaches

the optional use of a 1,2-quinonediazide as the component (a) of his formulation which imparts the light sensitivity. Thus, he can use both a 1,2-quinonediazide and a naphthoquinonediazidosulfonyl halide in the same composition. He does not disclose any equivalence between his 1,2-quinonediazide and his haloalkyl-substituted S-triazine.

As the Examiner points out, Newman describes a photosensitive composition comprising a phenolic resin, an onium salt and a spectral sensitizer which can be a cyanine dye. However, he provides no disclosure of Applicants' use of a mixture of a resole resin and a novolac resin nor of Applicants' use of a haloalkyl-substituted S-triazine.

With regard to the materials used for preparation of resole resins and novolac resins, Applicants do not base their case for patentability on the use of particular starting materials but on the use of the products in admixture and together with the other necessary components of the novel four-component formulation. Particularly good results in Applicants' novel four-component composition are achieved when the resole resin is derived from bis-phenol A and formaldehyde and the novolac resin is derived from m-cresol and formaldehyde. This is in no way disclosed or suggested by Newman.

Combining either or both of Stahlhofen and Newman with Garth can in no conceivable way suggest or render obvious Applicants' novel four-component composition. No reason exists to pick particular ingredients out of the formulation of Stahlhofen or the formulation of Newman and substitute them into the formulation of Garth. To combine references there must be appropriate motivation and none exists in this case. Moreover, it is not reasonable to arbitrarily pick and choose portions of a reference such as Stahlhofen or Newman while ignoring the totality of its teachings.

None of the three references describes a composition that has the advantageous characteristics

of Applicants' composition. Applicants' composition is useful to produce a printing plate which can be employed as either a positive-working plate or a negative-working plate. This is in no way the objective of Stahlhofen's invention. It is the objective of both Garth and Newman but in both instances the plates described require two exposure steps in order to be utilized as a negative-working plate, namely an imagewise exposure and a subsequent overall exposure. This serious disadvantage is completely avoided by Applicants' invention.

The attention of the Examiner is courteously directed to the disclosure from line 5, page 3 to line 29, page 5 of Applicants' specification which describes the deficiencies of both Garth and Newman and explains the advantages and benefits of the present invention.

The attention of the Examiner is courteously directed to the following summary of the holding in Ex parte Levenpood, 28 USPQ 2d 1300 (USPTO Bd of Pat. App. & Ints.) 1993:

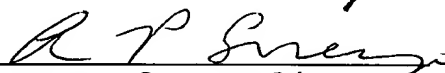
Motivation for combining prior art references need not be explicitly found in references themselves, and examiner may provide explanation based on logic and sound scientific reasoning that will support holding of obviousness; fact that invention's theoretical mechanism can be reconstructed and explained by means of logic and sound scientific reasoning does not, however, support obviousness determination unless that logic and reasoning would supply sufficient impetus to have led one of ordinary skill in art to combine references to make claimed invention, and thus examiner cannot establish obviousness by locating references which describe various aspects of applicant's invention unless examiner also provides evidence of motivating force which would

impel person skilled in art to do what applicant has done.

The Examiner has not provided any evidence of motivating force which would impel the person skilled in the art to do what Applicants have done and it is apparent that none exists.

In view of the filing of the terminal disclaimer and for all the reasons given above distinguishing the claimed invention from the prior art, this application is now believed to be in condition for allowance. Reconsideration is respectfully requested and an early favorable action is earnestly solicited.

Respectfully submitted,


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